AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A method for allocating a shared communication channel among a plurality of beams in a communication system comprising ~~a plurality of mobile stations and~~ a switched beam antenna system, wherein the shared communication channel comprises a plurality of orthogonal codes and wherein the method comprises ~~wherein the switched beam antenna system comprises an infrastructure and a plurality of beams for conveying user information from the infrastructure to the plurality of mobile stations, a method for conveying user information to each mobile station of the plurality of mobile stations, the method comprising a step of:~~

~~scheduling a different mobile station of the plurality of mobile stations for substantially simultaneous use of each beam of the plurality of beams~~

measuring a quality of a propagation channel associated with each beam of the plurality of beams; and

allocating a first portion of the plurality of orthogonal codes to a first beam of the plurality of beams and a second portion of the plurality of orthogonal codes to a second beam of the plurality of beams, wherein the first and second portions are a function of the measured quality of the propagation channels between a base station and mobile stations in the first beam and between the base station and mobile stations in the second beam.

2. (Currently Amended) The method of claim 1, ~~wherein a first mobile station of the a plurality of mobile stations is included in a first beam of the plurality of beams, wherein a second mobile station of the plurality of mobile stations is included in a second beam of the plurality of beams, wherein the communication system further comprises a shared communication channel, and wherein the method~~ further ~~comprises steps of~~ comprising:

~~assigning a first portion of the shared communication channel to the~~ scheduling a first mobile station for the first beam;

~~assigning a second portion of the shared communication channel to the~~ scheduling a second mobile station for the second beam;

transmitting the first portion of the ~~shared communication channel~~ plurality of orthogonal codes to the first mobile station via ~~in~~ the first beam; and

transmitting the second portion of the ~~shared communication channel~~ plurality of orthogonal codes to the second mobile station via ~~in~~ the second beam;

where the first and second portions of the plurality of orthogonal codes are based on the measured quality of the propagation channels between the base station and the first mobile station in the first beam and the quality of the propagation channel between the base station and the second mobile station in the second beam.

3. (Original) The method of claim 2, wherein the communication system further comprises a control channel and wherein the method further comprises a step of transmitting the control channel in each of the first beam and the second beam.

4. (Original) The method of claim 3, wherein the control channel comprises a first control channel, wherein the communication system further comprises a second control channel that is associated with the second mobile station and not with the first mobile station, and wherein the method further comprises a step of transmitting the second control channel in the second beam but not in the first beam.

5. (Original) The method of claim 2, wherein the communication system further comprises a plurality of voice channels and shared data channel and wherein the method further comprises steps of:

transmitting a plurality of voice channels and a portion of the orthogonal codes corresponding to the shared data channel in the first beam; and

transmitting a plurality of voice channels and a portion of the orthogonal codes corresponding to the shared data channel in the second beam.

6-9. (Canceled)

10. (Original) The method of claim 1, wherein the communication system is divided into a plurality of geographic sectors, and wherein each beam of the plurality of beams is transmitted in a same sector of the plurality of sectors.

11. (Original) The method of claim 10, further comprising a step of allocating to each beam of the plurality of beams an approximately same proportion of a total transmitted power allocated to the sector that includes the beams.

12. (Original) The method of claim 10, further comprising a step of allocating to each beam of the plurality of beams a different proportion of a total transmitted power allocated to the sector that includes the beams than the proportion of the total transmitted power allocated to the other beams of the plurality of beams, where the proportions reflect the average traffic loads within the beams.

13. (Currently Amended) In a communication system comprising a switched beam antenna system that generates a plurality of predetermined, fixed beams, a base station subsystem comprising:

an antenna array comprising a plurality of array elements; ~~and~~

~~a plurality of weighters, wherein each weighter of the plurality of weighters is coupled to an element of the plurality of elements; and~~

a processor ~~coupled to each weighter of the plurality of weighters, wherein the processor~~ that comprises an orthogonal code generator that generates a plurality of orthogonal codes, wherein the plurality of orthogonal codes are allocated to a shared communication channel, wherein the processor allocates a first portion of the plurality of orthogonal codes to a first array element of the plurality of array elementsand allocates a second portion of the plurality of orthogonal codes to a second array element of the plurality of plurality of array elements, wherein the processor allocates the plurality of orthogonal codes to the first and second array elementsbased on a propagation channel quality measurement associated with a first beam of the plurality of fixed beams and a propagation channel quality measurement associated with a second beam of the plurality of fixed beams, and wherein each of the first portion of the plurality of orthogonal codes and the second portion of the plurality of orthogonal codes are transmitted via one or more array elements of the plurality of array elements ~~conveys a first set of weighting coefficients to the weighters for a conveyance of information to a first mobile station of a plurality of mobile stations and further conveys a second set of weighting coefficients to~~

~~the weighters for a conveyance of information to a second mobile station of the plurality of mobile stations, wherein the first set of weighting coefficients are utilized by the weighters to transmit a first beam of the plurality of beams to the first mobile station and wherein the second set of weighting coefficients are utilized by the weighters to transmit a second beam of the plurality of beams to the second mobile station.~~

14. (Currently Amended) The base station subsystem of claim 13, further comprising a scheduler that assigns the first beam to ~~the~~ a first mobile station and assigns the second beam to ~~the~~ a second mobile station.

15-17. (Canceled)

18. (Currently Amended) The base station subsystem of claim ~~16~~ 13, wherein the base station subsystem further transmits a control channel in each of the first beam and the second beam.

19. (Original) The base station subsystem of claim 18, wherein the control channel comprises a first control channel and wherein the base station subsystem further transmits a second control channel in the second beam but not in the first beam.

20. (Original) The base station subsystem of claim 16, wherein the base station subsystem further transmits a plurality of voice channels and a first data channel of a portion of the orthogonal codes corresponding to the shared data channel in the first beam and transmits a plurality of voice channels and a portion of the orthogonal codes corresponding to the shared data channel in the second beam.

21. (Canceled)

22. (Original) The base station subsystem of claim 13, wherein the station subsystem operates in a communication system that is divided into a plurality of geographic sectors

and wherein each beam of the plurality of beams is transmitted in a same sector of the plurality of sectors.

23. (Original) The base station subsystem of claim 22, wherein the base station subsystem allocates a total transmitted power to the sector that includes the beams and wherein the base station subsystem further suballocates to each beam of the plurality of beams an approximately same proportion of a total transmitted power allocated to the sector that includes the beams.

24. (Original) The base station subsystem of claim 22, wherein the base station subsystem allocates a total transmitted power to the sector that includes the beams and wherein the base station subsystem further sub-allocates to each beam of the plurality of beams a different proportion of a total transmitted power allocated to the sector that includes the beams than the proportion of the total transmitted power allocated to the other beams of the plurality of beams, where the proportions reflect the average traffic loads within the beams.

25. (New) The method of claim 1, further comprising:

transmitting user information via the shared communication channel and the first beam; and

concurrent with the transmission of the user information, if no demand for the shared channel exists in the second beam for a given time slot, transmitting the same shared data channel transmission in the second beam as in the first beam.

26. (New) The method of claim 1, further comprising:

transmitting user information via the shared communication channel and the first beam; and

concurrent with the transmission of the user information, if no demand for the shared channel exists in the second beam for a given time slot, transmitting noise in the second beam using the orthogonal codes of the shared data channel unused by the first beam.

27. (New) The method of claim 25, further comprising maintaining a transmit power associated with the first beam approximately equal to a transmit power associated with the second beam.

28. (New) The method of claim 1, further comprising maintaining a transmit power associated with the first beam approximately equal to a transmit power associated with the second beam.

29. (New) The method of claim 2, further comprising:

maintaining an approximately constant transmit power for the shared communication channel in the first beam; and

maintaining an approximately constant transmit power for the shared communication channel in the second beam.

30. (New) The base station subsystem of claim 13, wherein the base station subsystem further comprises a plurality of weighters, wherein each weighter of the plurality of weighters is coupled to the processor and is further coupled to an array element of the plurality of array elements, and wherein the processor conveys a plurality of sets of weighting coefficients to the weighters, wherein a first set of weighting coefficients of the plurality of sets of weighting coefficients are utilized by the weighters to transmit via the first array element and wherein a second set of weighting coefficients of the plurality of sets of weighting coefficients are utilized by the weighters to transmit via the second array element.

31. (New) The base station subsystem of claim 13, wherein the base station subsystem transmits user information via the shared communication channel and the first beam and, concurrent with the transmission of the user information, if no demand for the shared channel exists in the second beam for a given time slot, transmits the same shared data channel transmission in the second beam as in the first beam.

32. (New) The base station subsystem of claim 13, wherein the base station subsystem transmits user information via the shared communication channel and the first beam and, concurrent with the transmission of the user information, if no demand for the shared channel exists in the second beam for a given time slot, transmits noise in the second beam using the orthogonal codes of the shared data channel unused by the first beam.

33. (New) The base station subsystem of claim 13, wherein the base station subsystem maintains a transmit power associated with the first beam approximately equal to a transmit power associated with the second beam.

34. (New) The base station subsystem of claim 14, wherein the processor maintains an approximately constant transmit power for the shared communication channel in the first beam and maintains an approximately constant transmit power for the shared communication channel in the second beam.